

Figure 4: A cross-sectional view of the double sided chip package of a second embodiment in the present invention; and

Figure 5: A top view of the double sided chip package of a second embodiment before molding in the present invention.--

Paragraph beginning at prenumbered line 27 of page 2 has been amended as follows:

--Figures 2 and 3 demonstrate the first embodiment of the present invention, in which a double sided chip package 20 comprises a LOC lead frame, an upper chip 21, a bottom chip 22 and a package body 27.--

Paragraph beginning at prenumbered line 3 of page 3 has been amended as follows:

--As shown in figure 2 and 3, the LOC lead frame in the present invention is a 'Lead-On-Chip' type of lead frame. Such a lead frame can be manufactured by applying common stamping or etching technique on a thin metal board made of steel or copper. It possesses a plurality of leads 23, with each lead 23 from inside to outside being divided into a supporting portion 231, an inner connecting portion 232 and an outer connecting portion 233. The supporting portion 231 is sandwiched between the upper chip 21 and the bottom chip 22 and is used to support the same two chips 21 and 22. The inner connecting portion 232 is inside the wire-bonding area 28, and serves as the connections between the bonding wire 26 and the leads 23. The outer connecting portion 233 is outside the encapsulating area 29, and serves as the outer electricity terminals for the double sided chip package 20. Since the supporting portion 231 of the lead 23 is inwardly extended to the area between the upper chip 21 and the bottom chip 22, this LOC lead frame can also be regarded as a 'lead-between-double-chips' type of lead frame. The leads 23 can support the upper chip 21 and the bottom chip 22 simultaneously and have a better stability as they are sandwiched by the same two chips 21 and 22. Therefore, as shown in figure 2, the supporting portions 231 and the inner connecting portions 232 of the leads 23 are formed on the same plane. Such a structure can provide an excellent stability without the needs of bending the leads. The supporting portion

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231 and the inner connecting portion 232 is better formed on a plane P1 with equal distance to the upper chip 21 and the bottom chip 22. When injecting molding compound being the precursor of the package body 27 before curing into the 1:1 molds (along the encapsulating area 29), such a structure can achieve a well-balanced molding flow without bending the leads 23. After curing, as shown in figure 2, the shape of the outer connection portion 233 of the leads 23 is bent to be gull-like or other shapes (e.g., I-like or J-like) for surface mounting.--

Paragraph beginning at prenumbered line 26 of page 4 has been amended as follows:

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--Therefore, the double sided chip package 20 of the present invention is capable of packaging two chips with single lead frame, and further achieves such multiple effects as less warping (no thermal expansion difference between the upper and the bottom part), less stress (the supporting portion of the lead is strip-shaped and can absorb stress), better protection (the upper and the bottom chip are sealed in the package body), more stabilized leads (leads are sandwiched between the upper and bottom chips) and well-balanced molding flow.--

Paragraph beginning at prenumbered line 12 of page 5 has been amended as follows:

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--As shown in figure 5, the LOC lead frame is another type of 'lead-on-chip' lead frame comprising a plurality of leads 33 and two power leads 35. Every lead 33 is used to transfer signals generated by the upper chip 31 and the bottom chip 32, and can be further from inside to outside divided into a supporting portion 331, an inner connecting portion 332, and an outer connecting portion 333. The supporting portions 331 are sandwiched between the upper chip 31 and the bottom chip 32, and are used to support the same two chips. The inner connecting portions 332 are located in a frame-shape wire-bonding area 38 and serves as the electrical connection sections of the leads 33 for the bonding wires 36. The outer connecting portion 333 is located outside the encapsulating area 39 (package body 37) and serves as the outer electrical connector for the double sided chip package 30. The power leads 35 are commonly known as the bus bar because their shape is like a

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cont.

handle. Inside the encapsulating area 39, each power lead 35 can be further divided into a supporting portion 351 and an inner connecting portion 352 extending outwardly to the two sides. The supporting portions 351 of the power leads 35 are located among the supporting portions 331 of the other leads 33 and are preferably perpendicular to the supporting portions 331. Likewise, the supporting portion 351 is used to support the upper chip 31 and the bottom chip 32. The inner connecting portions 352 are located inside a frame-shaped wire-bonding area 38, and serve as the interconnections from the bonding wire 36 to the power lead 35, so as to transfer electrical power to the upper chip 21 and the bottom chip 22. With the leads 33 and 35 of the above LOC lead frame in between the two chips, the leads 33 can simultaneously support the upper chip 31 and the bottom chip 32 and because the leads 33 are sandwiched between the same two chips, they therefore have better stability. As shown in figure 4, the supporting portions 331 and the inner connecting portions 332 of the leads 33 are formed on the same plane, such that it can achieve better stability without bending. A better situation is where the supporting portions 331 and the inner connecting portions 332 are formed on a plane P1 with the same distance to the upper chip 31 and the bottom chip 32. It can achieve well-balanced molding flow without the needs of bending the leads 33.--

✓ Paragraph beginning at prenumbered line 21 of page 6 through paragraph beginning at prenumbered line 3 of page 7 have been deleted in their entireties.

IN THE DRAWINGS:

Please enter the corrected formal drawing of Figure 1.

IN THE CLAIMS:

✓ Please cancel claims 1-6 without prejudice to or disclaimer of the subject matter recited therein.

Please add new claims 7-11 as follows:

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7. (New) A double sided chip package comprising: